

REMARKS

Introduction

A three-month extension of time to respond to the June 26, 2006 Office Action is hereby respectfully requested. The Director is hereby authorized to charge \$510.00 in payment of the three-month extension-of-time fee to Deposit Account No. 06-1075 (order no.: 099999.0099). A duplicate copy of this paper is enclosed.

Claims 1-155, 292-393, 400-408, 425-447, 456, 461, 465, 469, and 486-522 have been canceled without prejudice.

Claims 156-291, 394-399, 409-424, 448-455, 457-460, 462-464, 466-468, 470-485, and 523-530 are also currently pending in this case.

Claims 156, 157, 160, 161, 164, 165, 167, 169, 172-175, 177, 220, 222-225, 229-234, 236-241, 245-252, 268, 271, 274, 286, 289, 394, 395, 397-399, 409-412, 419-424, 451, 474, 479, and 484 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Findler et al. U.S. Patent 5,071,510 (hereinafter referred to as "Findler").

Claims 158, 159, 162, 163, 170, 171, 227, 228, 243, 244, 254, 255, 267, 269, 275, 287, 290, 452, 457, 475, 480, and 485 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Hori et al. U.S. Patent 5,188,706 (hereinafter referred to as "Hori").

Claims 166, 168, 176, 178, 186, 188, 221, 226, 235, 242, and 253 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Shimizu et al. U.S. Patent 4,618,397 (hereinafter referred to as "Shimizu").

Claims 179, 182-185, 187, 189, 192-194, 196, 207-214, 256-261, 265, 266, 277, 396, 413-416, 448, 453, 458, 471, 476, and 481 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Stein U.S. Patent 4,070,230 (hereinafter referred to as "Stein").

Claims 180, 181, 190, 191, 278, 281, and 284 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Stein as applied to claims 179 and 189, and further in view of Hori.

Claims 186, 188, 195, and 197 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Stein as applied to claims 179 and 189, and further in view of Shimizu.

Claims 198, 201-203, 205, 283, 417, 418, and 470 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Bergmans et al. U.S. Patent 4,835,765 (hereinafter referred to as "Bergmans").

Claims 199 and 200 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Bergmans as applied to claims 179 and 189, and further in view of Hori.

Claims 204 and 206 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Bergmans as applied to claims 179 and 189, and further in view of Shimizu.

Claims 215, 216, 262-264, 270, 273, 276, 288, 291, 523, 524, and 528-530 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Hori and Shimizu.

Claims 217, 218, 279, 282, 525, and 526 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Stein as applied to claims 179 and 189, and further in view of Hori and Shimizu.

Claims 219, 285, and 527 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Bergmans as applied to claim 198, and further in view of Stein, Hori, and Shimizu.

Application No. 10/665,757  
Amendment dated December 20, 2006  
Reply to Office Action of June 26, 2006

Claims 449, 450, 454, 455, 472, 473, 477, 478, 482, and 483 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Rubinstein et al. U.S. Patent 5,227,959 (hereinafter referred to as "Rubinstein").

Claims 459, 460, 463, and 464 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Stein as applied to claims 179 and 189, and further in view of Rubinstein.

Claims 467 and 468 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Bergmans as applied to claims 179 and 189, and further in view of Rubinstein.

Reconsideration and allowance of this application in light of the following remarks is hereby respectfully requested.

The Rejections Based on 35 U.S.C. § 102

The Examiner rejected claims 156, 157, 160, 161, 164, 165, 167, 169, 172-175, 177, 220, 222-225, 229-234, 236-241, 245-252, 268, 271, 274, 286, 289, 394, 395, 397-399, 409-412, 419-424, 451, 474, 479, and 484 under 35 U.S.C. § 102(b) as being anticipated by Findler. Applicant respectfully traverses.

Independent Claim 156

Applicant's independent claim 156 defines a "method of making an integrated circuit." The method includes "forming circuit devices at least one of under and on" a principle surface of a substrate, and "forming a stress-controlled dielectric membrane overlying the circuit devices," wherein the membrane is capable of forming "at least one of a flexible membrane, an elastic membrane, and a free standing membrane."

Nowhere does Findler show or suggest "making an integrated circuit," as required by applicant's independent claim 156. Instead, Findler merely describes "an intermediate layer 6 of Si<sub>3</sub>N<sub>4</sub>" (column 5, lines 29 and 30) over an aluminum layer, wherein the intermediate layer of Si<sub>3</sub>N<sub>4</sub> is used as part of the passivation of the aluminum layer 5 in combination with an "organic negative photo film 7" (column 5, lines 30 and 31). Thus, it is clear that intermediate layer 6 of Findler is not used in the fabrication of an integrated circuit, but instead is used as part of the passivation of an aluminum layer to protect its top surface while a portion of the bottom surface is electro-chemically thinned.

Furthermore, nowhere does Findler show or suggest making an integrated circuit by "forming a stress-controlled dielectric membrane overlying" circuit devices, wherein the membrane is capable of forming "at least one of a flexible membrane, an elastic membrane, and a free standing membrane," as required by applicant's independent claim 156. Instead, Findler is silent on the mechanical and physical properties of the Si<sub>3</sub>N<sub>4</sub> used by intermediate layer 6, such as its level of stress, type of stress, flexibility, elasticity, free standing properties. Findler describes its Si<sub>3</sub>N<sub>4</sub> layer 6 of FIG. 1 to be supported by various other layers (e.g., layers 2, 3, and 5) and is stated to be 800 nm (i.e., .8 microns) (see, e.g., column 6, line 14). Thus, Findler does not show or suggest that its Si<sub>3</sub>N<sub>4</sub> layer 6 is formed in any matter other than that which was commonly available in the art at the time of Findler. Therefore, there is no motivation or suggestion to infer that the stress of Findler's layer 6 was anything other than the typical stress of deposited Si<sub>3</sub>N<sub>4</sub> at that time (approximately 2E<sup>9</sup> dynes/cm<sup>2</sup>). Findler's stress was not a controlled stress but was rather a deposited stress, wherein the resulting film had a stress dependant upon the deposition equipment used.

Therefore, there is absolutely no basis to suggest that the stress of Findler's Si<sub>3</sub>N<sub>4</sub> layer 6 is anything other than a high stress typical of the time of Findler (i.e., approximately 2E<sup>9</sup> dynes/cm<sup>2</sup>). Such layers with that stress level are known to fracture easily, and cannot be made "free standing," "elastic," or "flexible," as required by applicant's independent claim 156. This point is further supported by Hori, which asserts that no "protecting film" with controlled stress was known at that time (i.e., at the time of Hori, and thus at the time of Findler) that could be deposited over a stress controlled metal absorber image layer (see, e.g., Hori, column 3, lines 62-65).

Thus, for at least the above reasons, applicant's independent claim 156 is allowable over Findler. Applicant respectfully requests, therefore, that the rejection under 35 U.S.C. § 102(b) of claim 156, and any claims dependent therefrom, including claims 157, 160, 161, 164, 165, 167, 251, 252, 271, 394, 409, 410, and 451, be withdrawn.

Independent Claim 169

Applicant's independent claim 169 defines a "method of making an integrated circuit." The method includes "forming sources, drains, and gates of circuit devices at least one of under and on" a principle surface of a substrate, and "forming a stress-controlled dielectric layer overlying selected ones of said sources, drains, and gates," wherein the dielectric layer is capable of forming "at least one of a flexible membrane, an elastic membrane, and a free standing membrane."

As described above, applicant's claim 156 is allowable over Findler. Therefore, for at least the same reasons that applicant's claim 156 is allowable over Findler, applicant's independent claim 169 is also allowable over Findler. Applicant respectfully requests, therefore, that the rejection under 35 U.S.C. § 102(b) of claim 169, and any claims dependent therefrom, including claims 172-175, 177, 274, 395, 411, and 412, be withdrawn.

Independent Claim 220

Applicant's independent claim 220 defines a "method of making an integrated circuit." The method includes "forming circuitry having active devices at least one of in and on a substrate," and "forming a stress-controlled dielectric membrane as part of said circuitry," wherein "the integrated circuit is able to have a major portion of the substrate removed throughout a full extent thereof while retaining its structural integrity."

Nowhere does Findler show or suggest "making an integrated circuit," as required by applicant's independent claim 220. Instead, Findler merely describes "an intermediate layer 6 of Si<sub>3</sub>N<sub>4</sub>" (column 5, lines 29 and 30) over an aluminum layer, wherein the intermediate layer of Si<sub>3</sub>N<sub>4</sub> is used as part of the passivation of the aluminum layer 5 in combination with an "organic negative photo film 7" (column 5, lines 30 and 31). It is clear that intermediate layer 6 of Findler is not used in the fabrication of an integrated circuit, but instead is used as part of the passivation of an aluminum layer to protect its top surface while a portion of the bottom surface is electro-chemically thinned.

Furthermore, nowhere does Findler show or suggest making an integrated circuit wherein "the integrated circuit is able to have a major portion of the substrate removed throughout a full extent thereof while retaining its structural integrity," as required by applicant's independent claim 220. Instead, while Findler suggests

that its electro-chemical thinning or etching process is compatible with wafers that have integrated circuitry formed thereon (see, e.g., column 4, lines 6-8 and column 7, lines 18-21), nowhere does Findler show or suggest that any portion of the integrated circuitry is formed overlying or as a part of the thinned silicon substrate.

Findler is directed towards the forming of a micromechanical component, and it is therefore clear that an integrated circuit could not be formed on the thin portion of the substrate of Findler because the proper operation of such an integrated circuit requires electrical basing from the substrate. However, in Findler, the substrate is completely removed, stopping on the epitaxy layer (see, e.g., column 5, lines 15-20 and 64-68). The epitaxy layer 2 of Findler is required to stop the etching process and the presence of the epitaxy layer 2 as part of an IC structure is necessary for Findler's integration compatibility (see, e.g., column 1, lines 24-28, and column 7, lines 13-21 and 39-45). Therefore, both the epitaxy layer 2 and an opposite doping type to that of the substrate are required by Findler for the electrical operation and function of Findler's integration compatibility. Findler is, thus, simply taking advantage of the availability of the np doping junction to form a thinned portion of the substrate. Therefore, it is obvious that the integrated circuit of Findler is not formed in the thinned portion of the substrate, as required by applicant's independent claim 220.

Moreover, Findler is directed to an etching process for the making of a micromechanical component, wherein the component portion is a thinned silicon layer at a portion of a silicon substrate, and thus, if there are integrated circuits thereon, the thinned silicon layer would only be able to be a portion of the die (i.e., the die would not be uniformly thinned). This is the case because Findler's etch process is directed towards making components (e.g., sensors)

that are enabled by that portion of the die that is thinned, otherwise there would be no need to thin any of Findler's die. Findler does not show or suggest that any integrated circuits are on any of these thinned portions of the die, and therefore, Findler does not show or suggest "an integrated circuit [that] is able to have a major portion of the substrate removed throughout a full extent thereof, while retaining its structural integrity," as required by applicant's independent claims 220.

Thus, for at least the above reasons, applicant's independent claim 220 is allowable over Findler. Applicant respectfully requests, therefore, that the rejection under 35 U.S.C. § 102(b) of claim 220, and any claims dependent therefrom, including claims 222-225, 229-233, 268, 397, 419, 420, and 474, be withdrawn.

Independent Claim 234

Applicant's independent claim 234 defines a "method of making an integrated circuit." The method includes "forming circuitry having active devices at least one of in and on a substrate," and "forming a stress-controlled dielectric layer as part of said circuitry," wherein "the integrated circuit is able to have a major portion of the substrate removed throughout a full extent thereof while retaining its structural integrity."

As described above, applicant's claim 220 is allowable over Findler. Therefore, for at least the same reasons that applicant's claim 220 is allowable over Findler, applicant's independent claim 234 is also allowable over Findler. Applicant respectfully requests, therefore, that the rejection under 35 U.S.C. § 102(b) of claim 234, and any claims dependent therefrom, including claims 236-241, 286, 398, 421, 422, and 479, be withdrawn.

Independent Claim 245

Applicant's independent claim 245 defines a "method of making an integrated circuit." The method includes "forming circuitry having active devices at least one of in and on a substrate," as well as "forming a stress-controlled dielectric layer as part of said circuitry" and "removing a major portion of the substrate throughout a full extent thereof without impairing the structural integrity of the integrated circuit."

As described above, applicant's claim 220 is allowable over Findler. Therefore, for at least the same reasons that applicant's claim 220 is allowable over Findler, applicant's independent claim 245 is also allowable over Findler. Applicant respectfully requests, therefore, that the rejection under 35 U.S.C. § 102(b) of claim 245, and any claims dependent therefrom, including claims 246-250, 289, 399, 423, 424, and 484, be withdrawn.

The Rejections Based on 35 U.S.C. § 103

Findler in view of Hori

Claims 158, 159, 162, 163, 170, 171, 227, 228, 243, 244, 254, 255, 267, 269, 275, 287, 290, 452, 457, 475, 480, and 485 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Hori. Applicant respectfully traverses.

Claims 158, 159, 162, 163, and 452

As applicant has pointed out above, independent claim 156 is patentable over Findler. For at least the foregoing reasons, claims 158, 159, 162, 163, and 452, each of which depends from claim 156, are patentable over Findler in view of Hori. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 158, 159, 162, 163, and 452 be withdrawn.

Claims 170, 171, 275, and 457

As applicant has pointed out above, independent claim 169 is patentable over Findler. For at least the foregoing reasons, claims 170, 171, 275, and 457, each of which depends from claim 169, are patentable over Findler in view of Hori. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 170, 171, 275, and 457 be withdrawn.

Claims 227, 228, 267, 269, and 475

As applicant has pointed out above, independent claim 220 is patentable over Findler. For at least the foregoing reasons, claims 227, 228, 267, 269, and 475, each of which depends from claim 220, are patentable over Findler in view of Hori. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 227, 228, 267, 269, and 475 be withdrawn.

Claims 243, 244, 287, and 480

As applicant has pointed out above, independent claim 234 is patentable over Findler. For at least the foregoing reasons, claims 243, 244, 287, and 480, each of which depends from claim 234, are patentable over Findler in view of Hori. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 243, 244, 287, and 480 be withdrawn.

Claims 254, 255, 290, and 485

As applicant has pointed out above, independent claim 245 is patentable over Findler. For at least the foregoing reasons, claims 254, 255, 290, and 485, each of which depends from claim 245, are patentable over Findler in view of Hori. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 254, 255, 290, and 485 be withdrawn.

Findler in view of Bergmans

Claims 198, 201-203, 205, 283, 417, 418, and 470 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Bergmans. Applicant respectfully traverses.

Applicant's independent claim 198 defines a "method of using an integrated circuit" having "interconnect circuitry formed within a stress-controlled dielectric layer." Like applicant's independent claim 156, the method of claim 198 further defines the method such that the "dielectric layer is capable of forming at least one of a flexible membrane, an elastic membrane, and a free standing membrane."

As described above, applicant's claim 156 is allowable over Findler. Therefore, for at least the same reasons that applicant's claim 156 is patentable over Findler, applicant's independent claim 198 is patentable over Findler in view of Bergmans. Applicant respectfully requests, therefore, that the rejection under 35 U.S.C. § 103(a) of claim 198, and any claims dependent therefrom, including claims 201-203, 205, 283, 417, 418, and 470, be withdrawn.

Findler in view of Stein

Claims 179, 182-185, 187, 189, 192-194, 196, 207-214, 256-261, 265, 266, 277, 396, 413-416, 448, 453, 458, 471, 476, and 481 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Stein. Applicant respectfully traverses.

Independent Claims 179

Applicant's independent claim 179 defines a "method of making an integrated circuit." The method includes "forming circuitry at least one of under and on" a principle surface of a substrate, wherein the circuitry includes "a stress-controlled dielectric layer." Like applicant's independent claim 156, the method of claim 179 further defines the method such that the

"dielectric layer is capable of forming at least one of a flexible membrane, an elastic membrane, and a free standing membrane."

As described above, applicant's claim 156 is patentable over Findler. Therefore, for at least the same reasons that applicant's claim 156 is patentable over Findler, applicant's independent claim 179 is patentable over Findler in view of Stein. Applicant respectfully requests, therefore, that the rejection under 35 U.S.C. § 103(a) of claim 179, and any claims dependent therefrom, including claims 182-185, 187, 209, 210, 277, 396, 413, 414, 458, be withdrawn.

Independent Claims 189

Applicant's independent claim 189 defines a "method of using an integrated circuit" having "a stress-controlled dielectric layer." Like applicant's independent claim 156, the method of claim 189 further defines the method such that the "dielectric layer is capable of forming at least one of a flexible membrane, an elastic membrane, and a free standing membrane."

As described above, applicant's claim 156 is allowable over Findler. Therefore, for at least the same reasons that applicant's claim 156 is patentable over Findler, applicant's independent claim 189 is patentable over Findler in view of Stein. Applicant respectfully requests, therefore, that the rejection under 35 U.S.C. § 103(a) of claim 189, and any claims dependent therefrom, including claims 192-194, 196, 211, 212, 415, and 416, be withdrawn.

Claims 207, 208, and 448

As applicant has pointed out above, independent claim 156 is patentable over Findler. For at least the foregoing reasons, claims 207, 208, and 448, each of which depends from claim 156, are patentable over Findler in view of Stein. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 207, 208, and 448 be withdrawn.

Claims 265, 266, and 453

As applicant has pointed out above, independent claim 169 is patentable over Findler. For at least the foregoing reasons, claims 265, 266, and 453, each of which depends from claim 169, are patentable over Findler in view of Stein. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 265, 266, and 453 be withdrawn.

Claims 213 and 214

As applicant has pointed out above, independent claim 198 is patentable over Findler in view of Bergmans. For at least the foregoing reasons, claims 213 and 214, each of which depends from claim 198, are patentable over Findler in view of Stein. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 213 and 214 be withdrawn.

Claims 256, 257, and 471

As applicant has pointed out above, independent claim 220 is patentable over Findler. For at least the foregoing reasons, claims 256, 257, and 471, each of which depends from claim 220, are patentable over Findler in view of Stein. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 256, 257, and 471 be withdrawn.

Claims 258, 259, and 476

As applicant has pointed out above, independent claim 234 is patentable over Findler. For at least the foregoing reasons, claims 258, 259, and 476, each of which depends from claim 234, are patentable over Findler in view of Stein. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 258, 259, and 476 be withdrawn.

Claims 260, 261, and 481

As applicant has pointed out above, independent claim 245 is patentable over Findler. For at least the foregoing reasons, claims 260, 261, and 481, each of which depends from claim 245, are patentable over Findler in view of Stein. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 260, 261, and 481 be withdrawn.

Findler in view of Shimizu

Claims 166, 168, 176, 178, 186, 188, 221, 226, 235, 242, and 253 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Shimizu. Applicant respectfully traverses.

Claims 166 and 168

As applicant has pointed out above, independent claim 156 is patentable over Findler. For at least the foregoing reasons, claims 166 and 168, each of which depends from claim 156, are patentable over Findler in view of Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 166 and 168 be withdrawn.

Claims 176 and 178

As applicant has pointed out above, independent claim 169 is patentable over Findler. For at least the foregoing reasons, claims 176 and 178, each of which depends from claim 169, are patentable over Findler in view of Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 176 and 178 be withdrawn.

Claims 186 and 188

As applicant has pointed out above, independent claim 179 is patentable over Findler in view of Stein. For at least the foregoing reasons, claims 186 and 188, each of which depends from claim 179, are patentable over Findler in view of Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 186 and 188 be withdrawn.

Claims 221 and 226

As applicant has pointed out above, independent claim 220 is patentable over Findler. For at least the foregoing reasons, claims 221 and 226, each of which depends from claim 220, are patentable over Findler in view of Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 221 and 226 be withdrawn.

Claims 235 and 241

As applicant has pointed out above, independent claim 234 is patentable over Findler. For at least the foregoing reasons, claims 235 and 241, each of which depends from claim 234, are patentable over Findler in view of Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 235 and 241 be withdrawn.

Claim 253

As applicant has pointed out above, independent claim 245 is patentable over Findler. For at least the foregoing reasons, claim 253, which depends from claim 245, is patentable over Findler in view of Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claim 253 be withdrawn.

Findler in view of Stein and Hori

Claims 180, 181, 190, 191, 278, 281, and 284 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Stein as applied to claims 179 and 189, and further in view of Hori. Applicant respectfully traverses.

Claims 180, 181, and 278

As applicant has pointed out above, independent claim 179 is patentable over Findler in view of Stein. For at least the foregoing reasons, claims 180, 181, and 278, each of which depends from claim 179, are patentable over Findler in view of Stein and Hori. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 180, 181, and 278 be withdrawn.

Claims 190, 191, and 281

As applicant has pointed out above, independent claim 189 is patentable over Findler in view of Stein. For at least the foregoing reasons, claims 190, 191, and 281, each of which depends from claim 189, are patentable over Findler in view of Stein and Hori. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 190, 191, and 281 be withdrawn.

Claim 284

As applicant has pointed out above, independent claim 198 is patentable over Findler in view of Bergmans. For at least the foregoing reasons, claim 284, which depends from claim 198, is patentable over Findler in view of Stein and Hori. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claim 284 be withdrawn.

Findler in view of Stein and Shimizu

Claims 186, 188, 195, and 197 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Stein as applied to claims 179 and 189, and further in view of Shimizu. Applicant respectfully traverses.

Claims 186 and 188

As applicant has pointed out above, independent claim 179 is patentable over Findler in view of Stein. For at least the foregoing reasons, claims 186 and 188, each of which depends from claim 179, are patentable over Findler in view of Stein and Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 186 and 188 be withdrawn.

Claims 195 and 197

As applicant has pointed out above, independent claim 189 is patentable over Findler in view of Stein. For at least the foregoing reasons, claims 195 and 197, each of which depends from claim 189, are patentable over Findler in view of Stein and Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 195 and 197 be withdrawn.

Findler in view of Bergmans and Hori

Claims 199 and 200 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Bergmans as applied to claims 179 and 189, and further in view of Hori. Applicant respectfully traverses.

As applicant has pointed out above, independent claim 198 is patentable over Findler in view of Bergmans. For at least the foregoing reasons, claims 199 and 200, each of which depends from claim 198, are patentable over Findler in view of Bergmans and Hori. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 199 and 200 be withdrawn.

Findler in view of Bergmans and Shimizu

Claims 204 and 206 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Bergmans as applied to claims 179 and 189, and further in view of Shimizu. Applicants respectfully traverse.

As applicant has pointed out above, independent claim 198 is patentable over Findler in view of Bergmans. For at least the foregoing reasons, claims 204 and 206, each of which depends from claim 198, are patentable over Findler in view of Bergmans and Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 204 and 206 be withdrawn.

Findler in view of Hori and Shimizu

Claims 215, 216, 262-264, 270, 273, 276, 288, 291, 523, 524, and 528-530 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Hori and Shimizu. Applicant respectfully traverses.

Claims 215, 273, and 523

As applicant has pointed out above, independent claim 156 is patentable over Findler. For at least the foregoing reasons, claims 215, 273, and 523, each of which depends from claim 156, are patentable over Findler in view of Hori and Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 215, 273, and 523 be withdrawn.

Claims 216, 276, and 524

As applicant has pointed out above, independent claim 169 is patentable over Findler. For at least the foregoing reasons, claims 216, 276, and 524, each of which depends from claim 169, are patentable over Findler in view of Hori and Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 216, 276, and 524 be withdrawn.

Claims 262, 270, and 528

As applicant has pointed out above, independent claim 220 is patentable over Findler. For at least the foregoing reasons, claims 262, 270, and 528, each of which depends from claim 220, are patentable over Findler in view of Hori and Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 262, 270, and 528 be withdrawn.

Claims 263, 288, and 529

As applicant has pointed out above, independent claim 234 is patentable over Findler. For at least the foregoing reasons, claims 263, 288, and 529, each of which depends from claim 234, are patentable over Findler in view of Hori and Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 263, 288, and 529 be withdrawn.

Claims 264, 291, and 530

As applicant has pointed out above, independent claim 245 is patentable over Findler. For at least the foregoing reasons, claims 264, 291, and 530, each of which depends from claim 245, are patentable over Findler in view of Hori and Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 264, 291, and 530 be withdrawn.

Findler in view of Stein and Hori and Shimizu

Claims 217, 218, 279, 282, 525, and 526 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Stein as applied to claims 179 and 189, and further in view of Hori and Shimizu. Applicant respectfully traverses.

Claims 217, 279, and 525

As applicant has pointed out above, independent claim 179 is patentable over Findler in view of Stein. For at least the foregoing reasons, claims 217, 279, and 525, each of which depends from claim 179, are patentable over Findler in view of Stein and Hori and Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 217, 279, and 525 be withdrawn.

Claims 218, 282, and 526

As applicant has pointed out above, independent claim 189 is patentable over Findler in view of Stein. For at least the foregoing reasons, claims 218, 282, and 526, each of which depends from claim 189, are patentable over Findler in view of Stein and Hori and Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 218, 282, and 526 be withdrawn.

Findler in view of Bergmans and Stein and Hori and Shimizu

Claims 219, 285, and 527 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Bergmans as applied to claim 198, and further in view of Stein, Hori, and Shimizu. Applicant respectfully traverses.

As applicant has pointed out above, independent claim 198 is patentable over Findler in view of Bergmans. For at least the foregoing reasons, claims 219, 285, and 527, each of which depends from claim 198, are patentable over Findler in view of Bergmans and Stein and Hori and Shimizu. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 219, 285, and 527 be withdrawn.

Findler in view of Rubinstein

Claims 449, 450, 454, 455, 472, 473, 477, 478, 482, and 483 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Rubinstein. Applicant respectfully traverses.

Claims 449 and 450

As applicant has pointed out above, independent claim 156 is patentable over Findler. For at least the foregoing reasons, claims 449 and 450, each of which depends from claim 156, are patentable over Findler in view of Rubinstein. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of 449 and 450 be withdrawn.

Claims 454 and 455

As applicant has pointed out above, independent claim 169 is patentable over Findler. For at least the foregoing reasons, claims 454 and 455, each of which depends from claim 169, are patentable over Findler in view of Rubinstein. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 454 and 455 be withdrawn.

Claims 472 and 473

As applicant has pointed out above, independent claim 220 is patentable over Findler. For at least the foregoing reasons, claims 472 and 473, each of which depends from claim 220, are patentable over Findler in view of Rubinstein. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 472 and 473 be withdrawn.

Claims 477 and 478

As applicant has pointed out above, independent claim 234 is patentable over Findler. For at least the foregoing reasons, claims 477 and 478, each of which depends from claim 234, are patentable over Findler in view of Rubinstein. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 477 and 478 be withdrawn.

Claims 482 and 483

As applicant has pointed out above, independent claim 245 is patentable over Findler. For at least the foregoing reasons, claims 482 and 483, each of which depends from claim 245, are patentable over Findler in view of Rubinstein. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 482 and 483 be withdrawn.

Findler in view of Stein and Rubinstein

Claims 459, 460, 463, and 464 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Stein as applied to claims 179 and 189, and further in view of Rubinstein. Applicant respectfully traverses.

Claims 459 and 460

As applicant has pointed out above, independent claim 179 is patentable over Findler in view of Stein. For at least the foregoing reasons, claims 459 and 460, each of which depends from claim 179, are patentable over Findler in view of Stein and Rubinstein. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 459 and 460 be withdrawn.

Claims 463 and 464

As applicant has pointed out above, independent claim 189 is patentable over Findler in view of Stein. For at least the foregoing reasons, claims 463 and 464, each of which depends from claim 189, are patentable over Findler in view of Stein and Rubinstein. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 463 and 464 be withdrawn.

Findler in view of Bergmans and Rubinstein

Claims 467 and 468 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Findler in view of Bergmans as applied to claims 179 and 189, and further in view of Rubinstein. Applicant respectfully traverses.

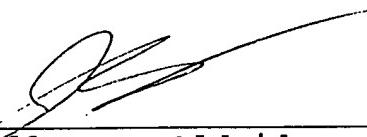
As applicant has pointed out above, independent claim 198 is patentable over Findler in view of Bergmans. For at least the foregoing reasons, claims 467 and 468, each of which depends from claim 198, are patentable over Findler in view of Bergmans and Rubinstein. As such, applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 467 and 468 be withdrawn.

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Conclusion

The foregoing demonstrates that claims 156-291, 394-399, 409-424, 448-455, 457-460, 462-464, 466-468, 470-485, and 523-530 are allowable. This application is therefore in condition for allowance.

Respectfully submitted,



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